

Claim 20 (New). The method of claim 17, wherein said forming includes adding ethylene glycol at a concentration of up to 50%.

REMARKS

This amendment accompanies a Continued Prosecution Application Request and Transmittal Under 37 C.F.R. § 1.53(d) and responds to a final Office Action dated November 3, 2000. Prior to entry of this Preliminary Amendment, claims 1-16 were pending in the application. In the final Office Action claims 1-16 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In addition, claims 1-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kodera et al. (US 5,445,996) in view of Grover et al. (US 5,759,917) and further in view of Burke et al. (US 5,934,978). No claims were allowed.

Applicant respectfully traverses the rejection of claims 1-16 under §112. The rejection, appearing on page 2 of the Final Office Action, states that the phrase "rate approximating a blanket polishing rate" as claimed does not particularly point out and distinctly claim the rate of polishing on the high structure areas. The specification at page 2, line 23 states that, "The blanket removal rates are measured on unpatterned wafers." Throughout the specification reference is made to "blanket rate 20" and "blanket removal rate 20." All of these terms, "blanket removal rate," "blanket rate" and "blanket polishing rate" are known synonyms in the polishing arts, especially in the art associated with chemical mechanical polishing (CMP).

Blanket polishing rates are used as a means of normalizing polishing rates and comparing polishing rates for various structures. The term was used as a reference term in the as-filed claims and helps clarify and define the invention. The polishing rates for structures, and the blanket polishing rate, which is for no structures, will vary based on equipment, pressure, and other factors. By utilizing the blanket polishing rate as a reference, it is possible to normalize out these factors and compare the polishing rates of different structures.

The phrase "rate approximating a blanket polishing rate" as claimed would be understood by one of ordinary skill in the art. It particularly points out and distinctly claims the rate of polishing on the high structure areas in the most appropriate manner for the relevant art. When reading the claims in light of the supporting specification, one of ordinary skill in the art would be able to ascertain with a reasonable degree of precision and particularity the reference rate being set forth. Applicant respectfully submits that the meaning is entirely and unarguably clear to anyone skilled in the art who reads applicant's specification. Accordingly, the claims 1-16 satisfy 35 U.S.C. §112.

In response to the rejection under §103, applicant respectfully submits that Kodera et al. actually teaches away from the present invention. Kodera et al. teaches the use of a physical stopper structure to reduce the polishing rate of low areas in order to avoid dishing. Col. 24, lines 32-36, of Kodera et al. teaches the use of a polysilicon stopper which is more resistive than the SiO₂ film overlying the SiO₂ film. Once the polysilicon film is polished off of the higher structures, the underlying SiO₂ film is polished at a faster rate than the polysilicon film remaining over the low areas. The benefits of a stopper are further summarized in Col. 26 lines 52-58 and Col.

27 lines 22-38. In addition, the only claim also requires a stopper layer (Col. 44 lines 44-45). Kodera et al. teaches modification of the device structure by applying a stopper as the means of achieving desired polishing behavior. Kodera et al. essentially teaches away from modifying the slurry in any way to achieve the desired polishing behavior. Further, there is no teaching or suggestion in Kodera et al. to combine its teachings with those of Burke et al. or Grover et al.

Even combined these references fail to teach a method of CMP that polishes high structure areas at a rate approximating a blanket polishing rate, while polishing low structure areas at a substantially zero rate. Applicant respectfully contends that there has been no prior art submitted which would tend to indicate that this result would be expected. The cited references do not anticipate, or teach, either alone or in combination, that ceria-based slurries can be modified to produce a slurry that approximates the blanket polishing rate for high structure areas. Applicant respectfully contends that the claims are patentable over the cited art, and requests that they be allowed.

Accordingly, applicant respectfully submits that his claimed process is not taught or suggested in any reference cited by the Examiner, either alone or in combination.


As an attachment hereto, applicant herewith submits a copy a all claims pending in the application, incorporating all amendments entered to date or submitted herein. Claim 13 has been amended to correct a typographical error in the spelling of the word "blanket", and not for any reason related to patentability of the claimed invention. Additional claims 17 through 20 have been added to clarify additional aspects of the invention as described in the specification.

A request for a three-month extension of time to respond,
together with a deposit account authorization covering the fee therefore,
accompanies this amendment.

In view of the foregoing, the Applicant requests reconsideration
of the application and submits that the application is now in allowable form
and should be passed to issue.

Respectfully submitted,

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Matthew D. Rabdau
Registration No. 43,026

Matthew D. Rabdau, Patent Attorney
Sharp Laboratories of America, Inc.
5750 N.W. Pacific Rim Blvd.
Camas, WA 98607

Telephone: (360) 834-8567
Facsimile: (360) 817-8505

**Attachment to Preliminary Amendment Accompanying
Continued Prosecution Application Under 37 § 1.53(d)
Dated May 2, 2001**

**Claims Amended in Application Serial No. 09/270,606
Showing Markup of Changes made on May 2, 2001**

13 (Amended). A method of CMP comprising:

forming a CMP slurry having a high structure polishing rate
lower than a blanket polishing rate;

adding a slurry modifier to the slurry to produce a modified
slurry that polishes high structures at a rate approximating the [blank]
blanket polishing rate; and

polishing high structure areas.